CITY OF COUNCIL (PWS 3020002)
SOURCE WATER ASSESSMENT FINAL REPORT

March 5, 2001

State of Idaho
Department of Environmental Quality

Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. This assessment is based on a land use inventory of the designated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

This report, *Source Water Assessment for City of Council, Idaho*, describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The City of Council drinking water system consists of three ground water sources. Each of the three wells only produces an average of 25% of the day. Wells #2 and #3 had moderate ratings for hydrologic sensitivity and moderate ratings for system construction. This led to an overall moderate susceptibility to inorganic contamination, volatile organic contamination, and synthetic organic contamination. Well #3 had a moderate susceptibility while Well #2 rated high due to the presence of total coliform bacteria in 1993. Well #4 rated low for all categories. Current water chemistry tests have recorded no other significant problems with the well water.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For the City of Council, source water protection activities should focus on implementation of best management practices aimed at protecting the wellheads and surface seals within the zone immediate to the wells. Urban and residential runoff should be monitored. Spills and accidents from businesses within the jurisdiction of the City should be closely monitored and dealt with. The addition of any significant quantity of agricultural land within the designated source water protection areas should be closely monitored; else the susceptibility to contamination could increase into the high category. Some of the source water protection designated areas are outside the direct jurisdiction of the City of Council. Partnerships with state and local agencies and industry groups should be established and are critical to success. Disinfection practices should be maintained to reduce the risk of microbial contamination. Due to the time involved with the movement of ground water, source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. Source water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil and Water Conservation District, and the Natural Resources Conservation Service.

A community with a fully developed source water protection program will incorporate many strategies. For assistance in developing protection strategies please contact the Boise Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR CITY OF COUNCIL, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are attached. The list of significant potential contaminant source categories and their rankings used to develop the assessment also is attached.

Background

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

Level of Accuracy and Purpose of the Assessment

Since there are over 2,900 public water sources in Idaho, there is limited time and resources to accomplish the assessments. All assessments must be completed by May of 2003. An in-depth, site-specific investigation of each significant potential source of contamination is not possible. **Therefore, this assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (DEQ) recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Wellhead or source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The City of Council wells are community wells that serve approximately 900 people and approximately 450 connections. The wells are located in Adams County, at various locations in and to the east of the City of Council (Figure 1). The public drinking water system for the City of Council is comprised of three wells.

Total coliform bacteria detections represent the only significant water chemistry problems that have been recorded in the public water system. The inorganic contaminants (IOCs) flouride and nitrate have been detected, but at levels well below the Maximum Contaminant Level (MCL). No detections of volatile organic contaminants (VOCs) or synthetic organic contaminants (SOCs) have been recorded.

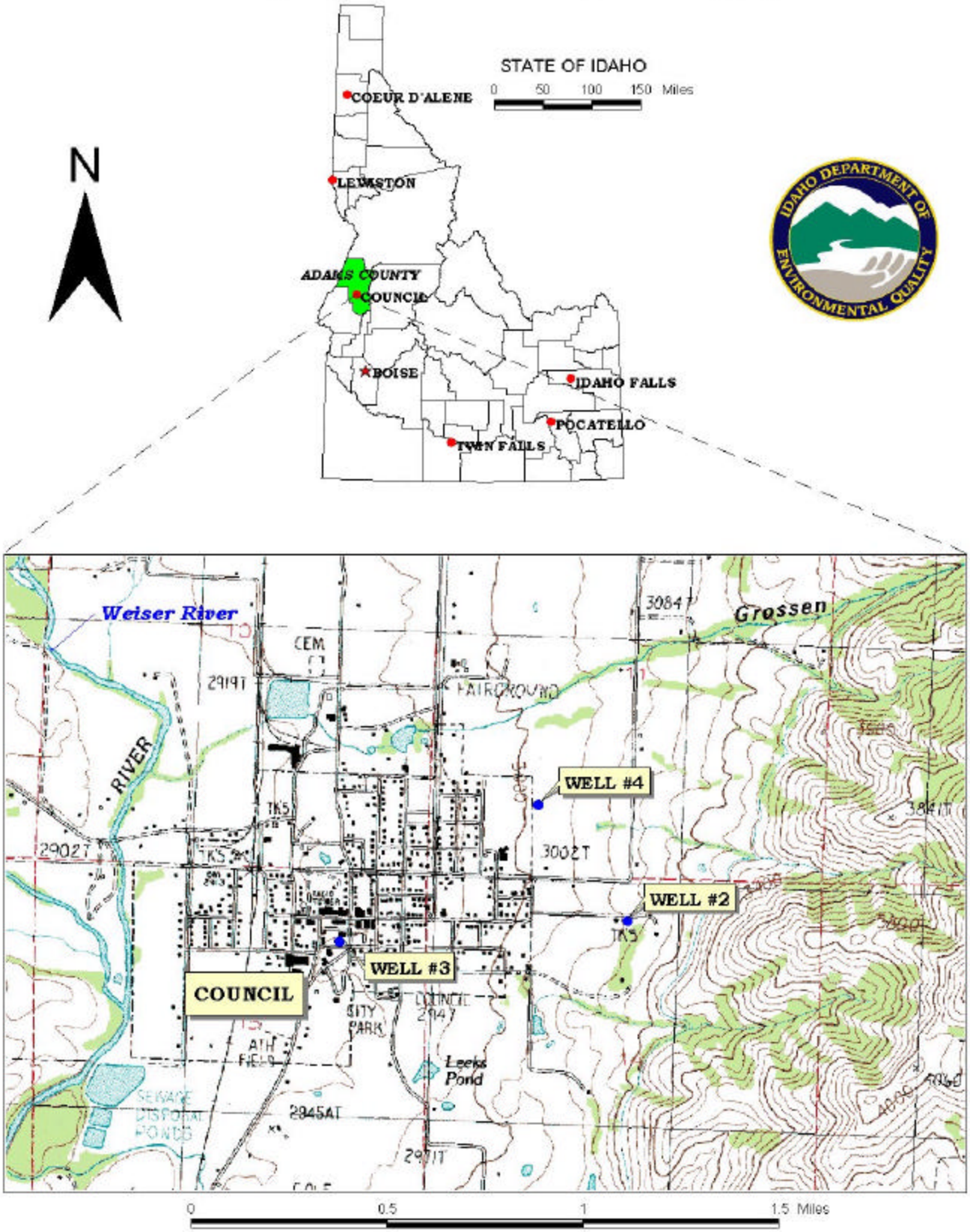
Defining the Zones of Contribution – Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time-of-travel (TOT) zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. DEQ used a refined computer model approved by the EPA in determining the 3-year (Zone 1B), 6-year (Zone 2), and 10-year (Zone 3) TOT for water associated with the Columbia River Basalt aquifer in the vicinity of the City of Council. The computer model used site specific data, assimilated by DEQ from a variety of sources including the City of Council well logs, other local area well logs, and hydrogeologic reports summarized below.

All three wells if the City of Council system take their water from the fractured aquifer of the Columbia River Basalt. Geologic formations associated with basalt of the Columbia Plateau are known to yield as much as several hundred gallons per minute (gpm) (IDWA, 1966). The Columbia River basalts are dense, exhibit columnar jointing in many places, and are folded and faulted leading to many fracture zones where ground water may collect. (Whitehead and Parliman, 1979). Basalt flows fracture at the surface as they cool. The fractures occur in the horizontal direction throughout the flow. Regional fractures hundreds or thousands of feet long may intersect several flows and have widely varying widths (Lum et al., 1990). The aquifer thickness ranges from 20 to 800 feet and the transmissivity ranges from 2,700 ft^2/day to 270,000 ft^2/day (Barker, 1979; Cohen and Ralston, 1980). Locally, multiple basalt flows meet to the northeast of town providing a strong gradient for ground water flow from that direction. Regional ground water recharge appears to follow the Weiser River valley from north to south.

The delineated source water assessment areas for City of Council wells can best be described as corridors approximately ¼ to 1 mile wide and 2 miles long extending north (Well #3) and northeast (Wells #2 and #4) from the City of Council (Figures 2, 3, 4). The actual data used by DEQ in determining the source water assessment delineation areas are available upon request.

FIGURE 1. Geographic Location of the City of Council



Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and from available databases.

The dominant land use outside the City of Council area is irrigated agriculture. Land use within the immediate area of the wellheads consists of residential subdivisions, urban and commercial uses, septic systems, and service stations.

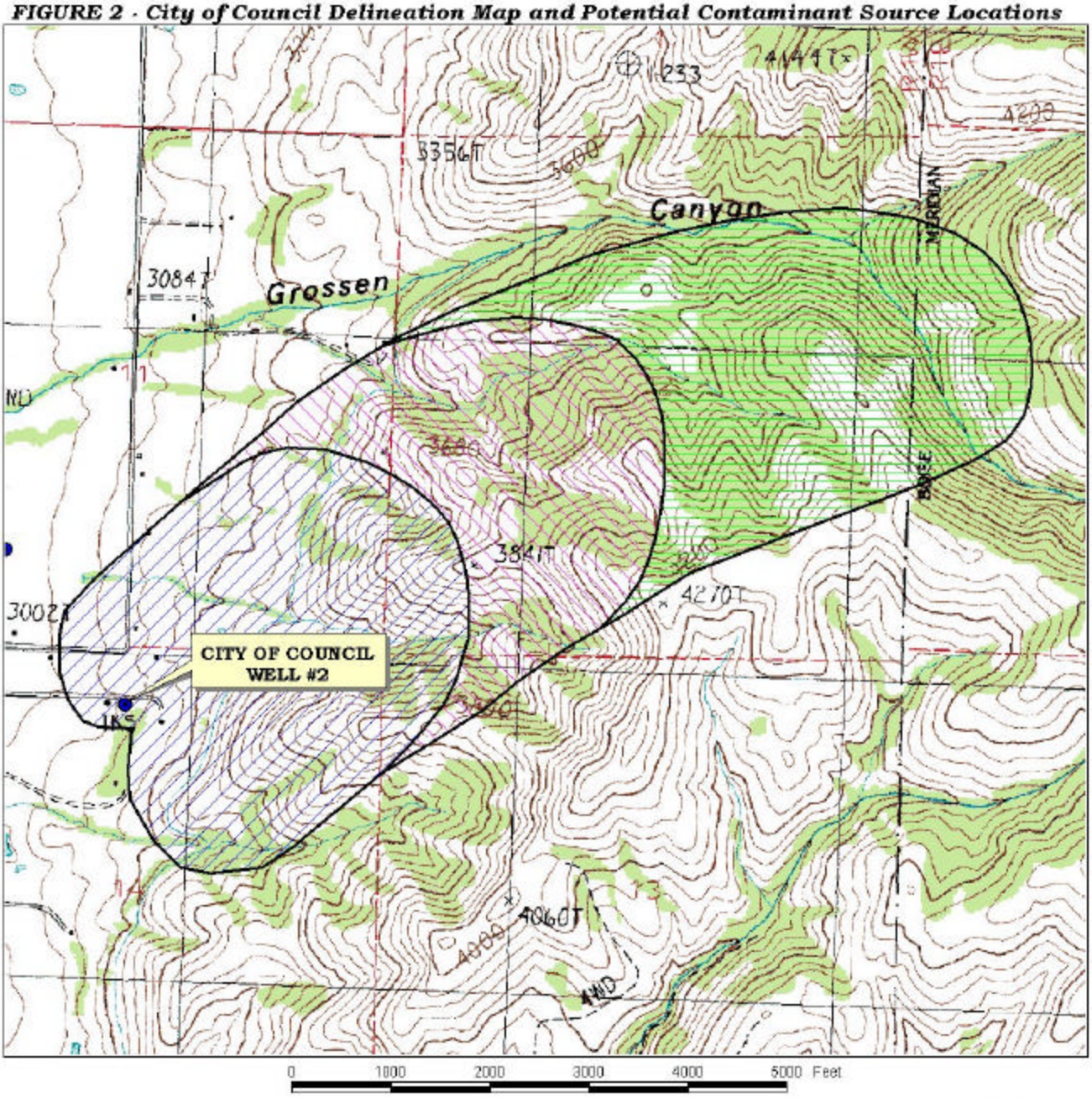
It is important to understand that a release may never occur from a potential source of contamination provided they are using best management practices. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination. These involve educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A two-phased contaminant inventory of the study area was conducted from December 2000 to January 2001. The first phase involved identifying and documenting potential contaminant sources within the City of Council Source Water Assessment Area through the use of computer databases and Geographic Information System (GIS) maps developed by DEQ. The second, or enhanced, phase of the contaminant inventory involved contacting the operator to validate the sources identified in phase one and to add any additional potential sources in the area. This task was undertaken with the assistance of Ron Hasselstrom.

Since the delineated source water protection areas encompass various portions of the Council area, the different wells have different numbers and types of potential contaminant sources. Wells #2 and #4 have no potential contaminant sites. Well #3, located in the city boundaries, has a delineation that encompasses the city proper and contains 18 potential contaminant sites at 13 locations (Table 1). The sources include a number of leaking underground storage tanks (LUSTs), underground storage tanks (USTs), service stations, an automotive supplier, and an automotive repair and service business. Additionally the delineation is crossed by Highway 95, which is a potential source for all types of contaminants. Figures 2, 3, and 4 show the locations of these various potential contaminant sites relative to the wellheads.

FIGURE 2 - City of Council Delineation Map and Potential Contaminant Source Locations



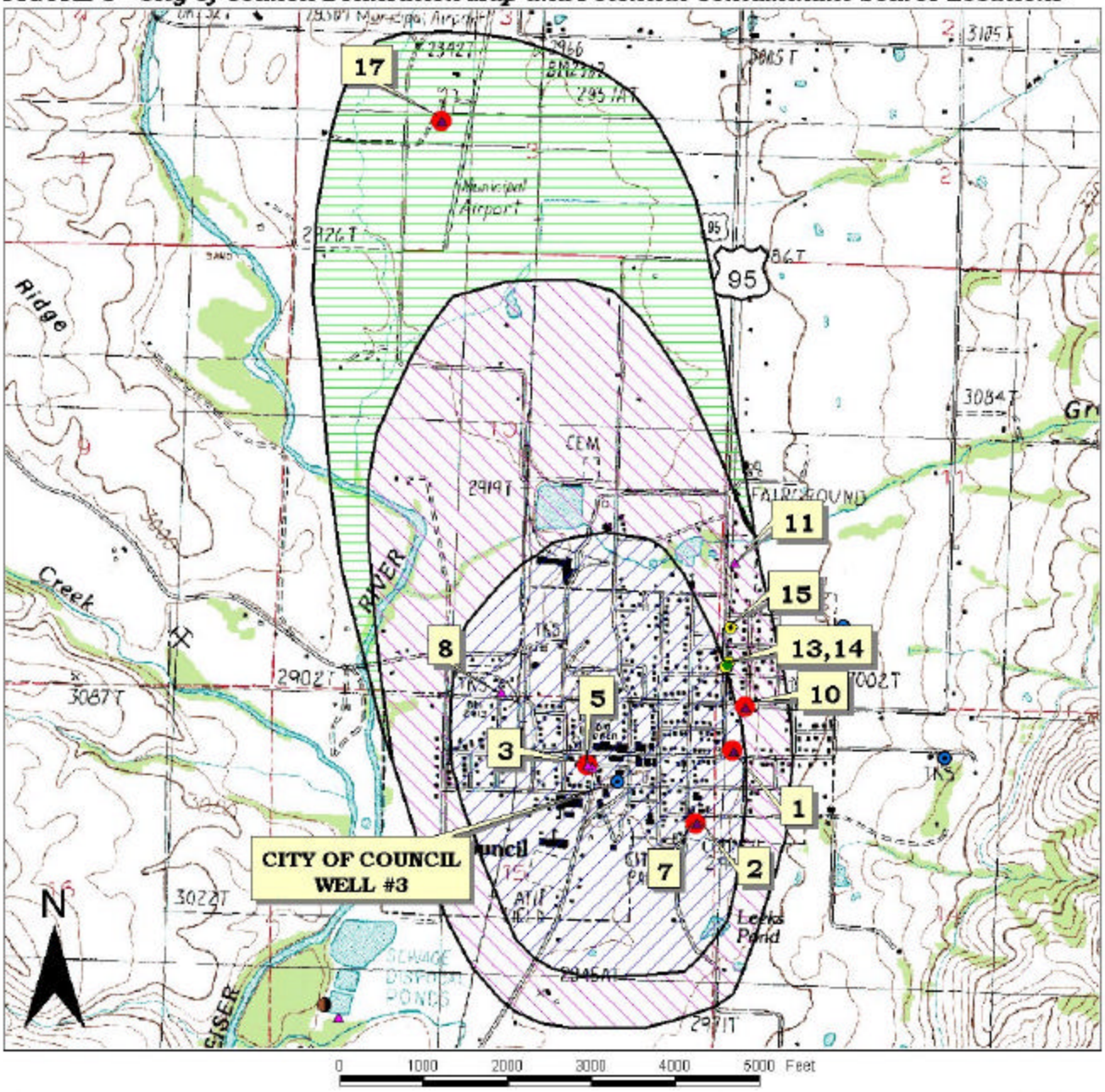
LEGEND

Time of Travel Zones
- 1 (5 yr TOT)
- 2 (6 yr TOT)
- 3 (10 yr TOT)
- Wellhead
- Enhanced Inventory
- CERCLIS Site
- RICRIS Site
- Dairy
- LUST Site
- Closed UST Site
- Open UST Site
- Business Mailing List
- NPDES Site
- Mine
- AST
- Toxic Release Inventory
- SARA Title III Site (EPCRA)
- Recharge Point
- Injection Well
- Group1 Site
- Cyanide Site
- Landfill
- Wastewater Land App Site

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY

PWS# 3020002
WELL# 2

FIGURE 3 - City of Council Delineation Map and Potential Contaminant Source Locations



LEGEND

Time of Travel Zones
- 1 (3 yr TOT)
- 2 (6 yr TOT)
- 3 (10 yr TOT)
- Wellhead
- Enhanced Inventory
- CERCLIS Site
- RICRIS Site
- Dairy
- LUST Site
- Closed UST Site
- Open UST Site
- Business Mailing List
- NPDES Site
- Mine
- AST
- Toxic Release Inventory
- SARA Title III Site (EPCRA)
- Recharge Point
- Injection Well
- Group1 Site
- Cyanide Site
- Landfill
- Wastewater Land App Site

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PWS# 3020002
WELL# 3

Table 1. City of Council Well #3, Potential Contaminant Inventory

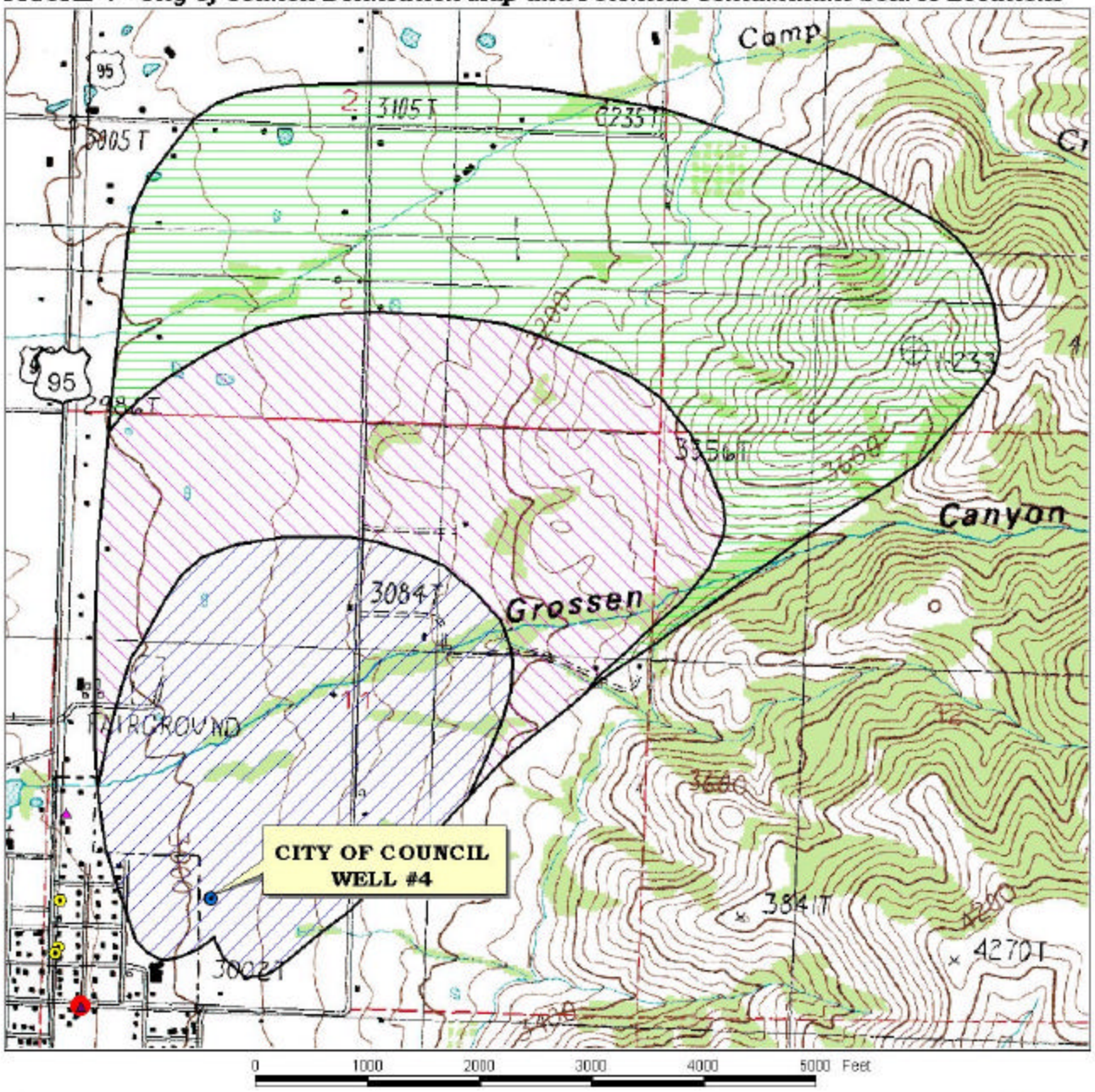
SITE #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
1	LUST – incomplete cleanup	0-3	Database Search	VOC, SOC
2	LUST – complete cleanup	0-3	Database Search	VOC, SOC
3	LUST – incomplete cleanup, impact to ground water	0-3	Database Search	IOC, VOC, SOC
4 (see map i.d. #1)	LUST – incomplete cleanup, impact to ground water	0-3	Database Search	VOC, SOC
5	UST – open	0-3	Database Search	VOC, SOC
6 (see map i.d. #3)	UST – open	0-3	Database Search	IOC, VOC, SOC
7	UST – closed	0-3	Database Search	VOC, SOC
8	UST – open	0-3	Database Search	IOC, VOC, SOC
9 (see map i.d. #1)	UST – closed	0-3	Database Search	VOC, SOC
10	LUST – incomplete cleanup	3-6	Database Search	VOC, SOC
11	UST – open	3-6	Database Search	IOC, VOC, SOC
12 (see map i.d. #10)	UST – closed	3-6	Database Search	VOC, SOC
13	Service Station	3-6	Database Search	IOC, VOC, SOC
14	Automotive - Retail	3-6	Database Search	VOC, SOC
15	Automotive Repair and Service	3-6	Database Search	IOC, VOC, SOC
16 (see map i.d. #13)	SARA – Service Station	3-6	Database Search	IOC, VOC, SOC
17	LUST – incomplete cleanup, impact to ground water	6-10	Database Search	VOC, SOC
18 (see map i.d. #17)	UST – closed; airline	6-10	Database Search	VOC, SOC
	Highway 95	0-10	Database Search	IOC, VOC, SOC, Microbial

[1] LUST = leaking underground storage tank, UST = underground storage tank, SARA = Superfund Amendments and Reauthorization Act site

[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead

[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

FIGURE 4 - City of Council Delineation Map and Potential Contaminant Source Locations



LEGEND

Time of Travel Zones
- 1B (3 yr TOT)
- 2 (6 yr TOT)
- 3 (10 yr TOT)
- Wellhead
- Enhanced Inventory
- CERCLIS Site
- RICRIS Site
- Dairy
- LUST Site
- Closed UST Site
- Open UST Site
- Business Mailing List
- NPDES Site
- Mine
- AST
- Toxic Release Inventory
- SARA Title III Site (EPCRA)
- Recharge Point
- Injection Well
- Group1 Site
- Cyanide Site
- Landfill
- Wastewater Land App Site

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY

PWS# 3020002
WELL# 4

Section 3. Susceptibility Analyses

The water system's susceptibility to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristic, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

Hydrologic sensitivity was moderate for Wells #2 and #3 (Table 2). This reflects the nature of the soils being in the poorly-drained to moderately-drained class, the vadose zone (zone from land surface to the water table) being made predominantly of fractured basalt, and the first ground water being located within 300 feet of ground surface. Additionally, Wells #2 and #3 do not have laterally extensive low permeability units that could retard downward movement of contaminants. Well #4 has a hydrologic sensitivity rating of low because the vadose zone is made of clay, which helps retard the movement of contaminants and there is at least 50 feet cumulative thickness of low permeability units.

Well Construction

Well construction directly affects the ability of the well to protect the aquifer from contaminants. The City of Council drinking water system consists of three wells that extract ground water for residential, commercial, and industrial uses. The well system construction scores were moderate for all the wells.

A sanitary survey for the three wells was completed in September 1997 to determine if the wells were in compliance with wellhead and surface seal standards. Wells #2 and #3 have concrete block well houses, while Well #4 has a wood and tin well house. All three wells have well casing raised at least 18 inches above the floor to protect the wells from flooding. Each of the wells has a maintained wellhead seal and a downturned, screened casing vent.

Well logs were available for all the wells, though Well #2 only had a partial log, so a determination was made as to whether the casing and annular seals had been extended into low permeability units and whether current public water system (PWS) construction standards were being met. The Well #2 log is incomplete geologic data because only the 1963 log associated with the deepening of the well is on file with the Idaho Department of Water Resources (IDWR). The contractor drilled from 380 feet below ground surface (bgs) to 730 feet bgs, but added no casing. The water table was identified at 210 feet bgs. No determination could be made as to whether the well was properly constructed to meet IDWR standards.

The Well #3 log shows that the annular seal extends to 28 feet bgs into a water producing basalt layer. The well has 0.375-inch thick, 12-inch diameter steel casing from ground surface to the depth of the well at 187 feet bgs into a water producing basalt zone. There is uncased hole from 187 feet bgs to 408 feet bgs. The water table was identified at 38 feet bgs. Perforations were installed from 87 feet bgs to 187 feet bgs. Basalt was recorded from 2 feet bgs to the bottom of the hole. Though the well may have been in compliance with standards when it was drilled in 1973, current PWS well construction standards are more stringent.

The Well #4 log shows that the annular seal extends to 55 feet bgs into a low permeability brown clay layer. The well uses 0.250-inch thick, 12-inch diameter casing extending to 433 feet bgs into unfractured black basalt. Uncased hole extends to 925 feet bgs. The water table was identified at 130 feet bgs. Perforations were installed from 405 feet bgs to 425 feet bgs. The discharge potential of the various fractures when the well was drilled in 1994 include 80 gallons per minute (gpm) from 100 feet bgs to 105 feet bgs and 127 feet bgs to 130 feet bgs, 20 gpm from 305 feet bgs to 307 feet bgs, 60 gpm from 405 feet bgs to 407 feet bgs and from 423 feet bgs to 427 feet bgs, and 60 gpm from 685 feet bgs to 687 feet bgs. Though the well may have been in compliance with standards when it was drilled in 1994, current PWS well construction standards are more stringent.

The IDWR Well Construction Standards Rules (1993) require all PWSs to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the Recommended Standards for Water Works (1997) during construction. Table 1 of the Recommended Standards for Water Works (1997) lists the required steel casing thicknesses for various diameter wells. Twelve-inch diameter casing on wells requires a casing thickness of at least 0.375-inches. Casing information for Well #2 is insufficient and Well #4 has only 0.250-inch thick casing. In consolidated formations when there is less than 50 feet of unconsolidated material, the surface seal must be installed to 50 feet bgs. The surface seal for Well #3 only reached 28 feet bgs.

Potential Contaminant Sources and Land Use

Wells #2 and #4 rated low for IOCs (i.e. nitrates), SOCs (i.e. pesticides), VOCs (i.e. petroleum products), and microbial contaminants because there were no potential contaminant sites within the delineations. Well #3 rated moderate for IOCs, SOCs, and VOCs, and low for microbial contaminants. Commercial and industrial land uses in the Well #3 delineated source area contributed the largest numbers of IOC, VOC, and SOC points to the contaminant inventory rating. Microbial contaminants were contributed from the transportation corridor, Highway 95, which potentially could have accidental spills.

The only significant water chemistry problems that have been recorded in the system are from occasional total coliform bacteria detections in various points of the distribution system, as well as from Well #2 in April 1993. The inorganic contaminants (IOCs) flouride and nitrate have been detected, but at levels well below the Maximum Contaminant Level (MCL). No detections of volatile organic contaminants (VOCs) or synthetic organic contaminants (SOCs) have been recorded.

Final Susceptibility Ranking

A detection above a drinking water standard MCL or a detection of total coliform bacteria or fecal coliform bacteria at the wellhead will automatically give a high susceptibility rating to a well despite the land use of the area because a pathway for contamination already exists. Hydrologic sensitivity and system construction scores are heavily weighted in the final scores. Having multiple potential contaminant sources in the 0 to 3-year time of travel zone (Zone 1B) and a large percentage of agricultural land contribute greatly to the overall ranking. In terms of total susceptibility, Well #2 rates automatically high for microbial contamination and moderate in all other categories. Well #3 rates moderate for all categories. Well #4 rates low for all categories.

Table 2. Summary of City of Council Susceptibility Evaluation

Well	**Susceptibility Scores[1]**									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	**Final Susceptibility Ranking**			
		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Well #2	M	L	L	L	L	M	M	M	M	H*[2]
Well #3	M	M	M	M	L	M	M	M	M	M
Well #4	L	L	L	L	L	M	L	L	L	L

[1]H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility, IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

[2]H* = Well rated automatically high due to a Maximum Contaminant Level exceedance for bacteria in the tested drinking water.

Susceptibility Summary

The only significant water chemistry problems that have been recorded in the well water include the occasional total coliform bacteria detection in various points of the distribution system, as well as from Well #2 in April 1993. The IOCs flouride and nitrate have been detected, but at levels well below the MCL. No detections of VOCs or SOCs have been recorded.

Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective source water protection program is tailored to the particular local source water protection area. A community with a fully developed source water protection program will incorporate many strategies. For the City of Council, source water protection activities should focus on implementation of practices aimed at protecting the area nearest the wells. The City of Council should also be diligent about local businesses that are regulated by the various environmental regulations (RCRA, CERCLA, SARA) or those with potential inorganic contaminants. Though water quality is generally good for the City of Council, the highly fractured nature of the Columbia River basalt could lead to cross-contamination from shallower fractures to deeper fractures depending on well construction. Any surface releases should be monitored closely to prevent contaminants from infiltrating to the ground water producing zones. Some of the designated source water protection areas are outside the direct jurisdiction of the City of Council. Partnerships with state and local agencies and industry groups should be established and are critical to success. Continued vigilance in keeping the well protected from surface flooding can also keep the potential for contamination reduced. Due to the time involved with the movement of ground water, wellhead protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. Source water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil and Water Conservation District, and the Natural Resources Conservation Service.

Assistance

Public water supplies and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Boise Regional DEQ Office (208) 373-0550

State DEQ Office (208) 373-0502

Website: http://www.deq.state.id.us

Water suppliers serving fewer than 10,000 persons may contact Melinda Harper, Idaho Rural Water Association, at (208) 343-7001 (mharper@idahoruralwater.com) for assistance with drinking water protection (formerly wellhead protection) strategies.

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund≅ is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

References Cited

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Whitehead, R.L. and D.J. Parliman, 1979. A Proposed Ground Water Quality Monitoring Network for Idaho. U.S. Geological Survey (prepared in cooperation with Idaho Department of Health and Welfare, Division of Environment), Water Resources Investigations, Open-File Report 79-1477, 67 p.

Attachment A

City of Council Susceptibility Analysis Worksheet

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Ground Water Susceptibility Report Public Water System Name : COUNCIL CITY OF Well# : WELL #2

Public Water System Number 3020002 01/30/2001 1:29:40 PM

1. System Construction		SCORE
Drill Date	01/22/1963	
Driller Log Available	YES	
Sanitary Survey (if yes, indicate date of last survey)	YES	1997
Well meets IDWR construction standards	NO	1
Wellhead and surface seal maintained	YES	0
Casing and annular seal extend to low permeability unit	NO	2
Highest production 100 feet below static water level	YES	0
Well located outside the 100 year flood plain	YES	0
Total System Construction Score		3

2. Hydrologic Sensitivity		
Soils are poorly to moderately drained	YES	0
Vadose zone composed of gravel, fractured rock or unknown	YES	1
Depth to first water > 300 feet	NO	1
Aquitard present with > 50 feet cumulative thickness	NO	2
Total Hydrologic Score		4

3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	URBAN/COMMERCIAL	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	NO	NO	YES
Total Potential Contaminant Source/Land Use Score - Zone 1A		2	2	2	2

Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	NO	0	0	0	0
(Score = # Sources X 2) 8 Points Maximum		0	0	0	0
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		0	0	0	0

Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Land Use Zone II	Less than 25% Agricultural Land	0	0	0	
Potential Contaminant Source / Land Use Score - Zone II		0	0	0	0

Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0	

Total Potential Contaminant Source / Land Use Score - Zone III	0	0	0	0
Cumulative Potential Contaminant / Land Use Score	2	2	2	2
4. Final Susceptibility Source Score	7	7	7	8
5. Final Well Ranking	Moderate	Moderate	Moderate	High*

Ground Water Susceptibility Report Public Water System Name : COUNCIL CITY OF Well# : WELL #3

Public Water System Number 3020002 01/31/2001 8:12:24 AM

1. System Construction		SCORE
Drill Date	04/27/1973	
Driller Log Available	YES	
Sanitary Survey (if yes, indicate date of last survey)	YES	1997
Well meets IDWR construction standards	NO	1
Wellhead and surface seal maintained	YES	0
Casing and annular seal extend to low permeability unit	NO	2
Highest production 100 feet below static water level	NO	1
Well located outside the 100 year flood plain	YES	0
	Total System Construction Score	4

2. Hydrologic Sensitivity		
Soils are poorly to moderately drained	YES	0
Vadose zone composed of gravel, fractured rock or unknown	YES	1
Depth to first water > 300 feet	NO	1
Aquitard present with > 50 feet cumulative thickness	NO	2
	Total Hydrologic Score	4

3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	URBAN/COMMERCIAL	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		2	2	2	2
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	3	7	7	1
(Score = # Sources X 2) 8 Points Maximum		6	8	8	2
Sources of Class II or III leacheable contaminants or	YES	1	7	1	
4 Points Maximum		1	4	1	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		7	12	9	2
Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	YES	2	2	2	
Sources of Class II or III leacheable contaminants or	YES	1	1	1	
Land Use Zone II	25 to 50% Irrigated Agricultural Land	1	1	1	
Potential Contaminant Source / Land Use Score - Zone II		4	4	4	0
Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	YES	1	1	1	
Sources of Class II or III leacheable contaminants or	YES	1	1	1	
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III		2	2	2	0

Cumulative Potential Contaminant / Land Use Score	15	20	17	4
4. Final Susceptibility Source Score	11	12	11	10
5. Final Well Ranking	Moderate	Moderate	Moderate	Moderate

Ground Water Susceptibility Report Public Water System Name : COUNCIL CITY OF Well# : WELL #4

Public Water System Number 3020002 01/30/2001 1:30:06 PM

1. System Construction		SCORE
Drill Date	07/22/1994	
Driller Log Available	YES	
Sanitary Survey (if yes, indicate date of last survey)	YES	1997
Well meets IDWR construction standards	NO	1
Wellhead and surface seal maintained	YES	0
Casing and annular seal extend to low permeability unit	YES	0
Highest production 100 feet below static water level	NO	1
Well located outside the 100 year flood plain	YES	0
	Total System Construction Score	2

2. Hydrologic Sensitivity		
Soils are poorly to moderately drained	YES	0
Vadose zone composed of gravel, fractured rock or unknown	NO	0
Depth to first water > 300 feet	NO	1
Aquitard present with > 50 feet cumulative thickness	YES	0
	Total Hydrologic Score	1

3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	DRYLAND AGRICULTURE	1	1	1	1
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		1	1	1	1

Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	NO	0	0	0	0
(Score = # Sources X 2) 8 Points Maximum		0	0	0	0
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		0	0	0	0

Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	YES	1	0	0	
Land Use Zone II	25 to 50% Irrigated Agricultural Land	1	1	1	
Potential Contaminant Source / Land Use Score - Zone II		2	1	1	0

Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III		0	0	0	0

Cumulative Potential Contaminant / Land Use Score	3	2	2	1
4. Final Susceptibility Source Score	4	3	3	3
5. Final Well Ranking	Low	Low	Low	Low